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Examination of a Typewritten Document

By David W. Attenberger and W. Gary Kanaskie

U.S. Department of Justice
National Institute of Justice

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5) Proportional spacing—This type of horizontal spacing is not constant. Each typewritten character can occupy a different amount of horizontal space. The capital "M" occupies five units while the lower case "i" occupies two units of horizontal space. Each unit is equivalent to 1/32, 1/36, or 1/45 of an inch on the conventional typewriter. (See fig. 4.)

6) Dual-spaced machine—This is a typewriter that is capable of typing horizontally 10 characters or 12 characters per inch. The change of horizontal spacing is done easily by the flip of a switch. This is commonly found on single element (ball) typewriters.

7) Electronic typewriter—This machine usually has the capability of typing 10, 12, and 15 letters to an inch, as well as proportional spacing.

History and Development of Typewriters

Starting with the first commercially successful typewriter in 1873 (Remington), the machines used to prepare typed documents have progressed and changed dramatically. Beginning with a typewriter using the hammer (typebars) which used only capital (uppercase) letters, intense competition between various companies brought about continual improvements. In 1888, the "touch typing" system was introduced. In 1920, the first portable typewriter was marketed; in 1940, IBM introduced a proportional spaced typewriter; in 1961 and 1962, single element (ball) typewriters were available; and in 1970 and 1971, dual-spaced (spacing) machines were introduced. The mid-1970's produced electronic typewriters and the use of "printwheels," "daisywheels," and disk-type wheels containing the type styles. The printed text on a document can now be the result of a typewriter, a word processing system, or a high-speed printer.

The two most frequently made typewriting examinations are determining the make and model typewriter used to prepare the questioned document and determining whether a specific known typewriter prepared the questioned document.

Classification of Make and Model

Original typewriting is preferred for examination. In examining the typewriting, the document examiner first determines the horizontal spacing of the questioned typewriting. The typewritten text is then examined for any characteristics unique to a particular typewriter, typewriter manufacturer, or type manufacturer. If no unique characteristic(s) are found, the questioned typewriting is searched through the typewriter standards file. This file consists of American and foreign type styles collected by the FBI Laboratory over the past 50 years.
Once a known standard similar to the questioned typewriting is located, the questioned typewriting is compared with the standard to ensure that each character corresponds with the respective character in the known standard. The known standard is also used to verify that all suspected defects in the questioned typewriting are, in fact, defects.

Currently, numerous typewriter manufacturers obtain type fonts from the same type font manufacturer(s). Thus, many different brand name typewriters are equipped with a similar, if not identical, style of type. For saving a complete keyboard of the questioned typewriter, the questioned typewriting was produced.

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Comparison of the Questioned Typewritten Text With Known Typewritten Exemplars

When questioned typewriting is compared with known typewritten exemplars, three general areas of examinations are made:

1) Size and spacing (vertical and horizontal);
2) Type style, and
3) Unique identifying characteristics—character and alignment defects.

Using these three general areas, the FBI document examiner ultimately tries to determine if a particular typewriter prepared the questioned document to the exclusion of all other typewriters.

Referring to the machines previously described as having dual spacing, single elements, or printwheels, the investigating officer must not be misled by horizontal spacing and/or different alignment characteristics. Remember, the same typewriter can type 10 letters and 10 letters per inch. Also, single elements and printwheels can be interchanged from one typewriter to another. This means that if a ball-type element or printwheel was used to prepare the questioned document, it is necessary not only to identify the single element or printwheel but also the specific typewriter. These compound considerations make the typewriter identification more complex.

Unique identifying characteristics commonly found on typewriter machines, such as broken or bent serifs on a particular character, are not found as frequently on single elements or printwheels. This further complicates determining whether the questioned document can be positively associated with a particular typewriter or typewriting source.

In general, due to typewriter companies obtaining their type styles from the same manufacturer and due to the lack of unique identifying characteristics in the typewriting produced by single element and printwheeled typewriters, the investigating officer should not expect too many positive identifications involving typewriters equipped with single elements and printwheels. However, many associations and identifications can be made when the conventional typewriter machines are involved in the preparation of a typewritten text. Finally, although the particular typewriter may not be positively identified, it may be possible to determine that a particular typewriter or typewriting source did not prepare the questioned document.

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Obtaining Known Typewritten Exemplars

The following guidelines are suggested for obtaining typewritten exemplars from a suspect typewriter:

1) If the typewriter ribbon is obviously new, remove it from the typewriter and send it to the laboratory with the typewriting exemplars prepared from another ribbon. (The text of the material in question may still be discernible on the ribbon.)

2) If the questioned document is excessively long, obtain its complete text, including typographical areas.

3) After placing the typewriter in a steady position or removing the cloth ribbon, obtain samples of each character on the keyboard by typing through carbon paper which has been inserted carbon side down over a piece of white bond paper.

4) Make certain that each specimen contains the make, model, and serial number of the typewriter from which it was procured, as well as the date and the initials of the officer.

5) Typewriter specimens should be taken from suspect typewriters. It is usually not necessary to forward the typewriter to the FBI Laboratory if complete known exemplars are obtained. This will insure against loss or damage to the typewriter during shipment.

Also, examination of the typewritten exemplars may produce the requested result, thus eliminating cost and time involved in utilizing the typewriter to the Laboratory. However, when certain alignment or spacing areas are present in a questioned and known typewriting, the document examiner may require that the known typewriter be submitted to the Laboratory for a more definite opinion to be reached.

6) If possible, after a typewritten exemplar is obtained from a suspect typewriter, the investigator should insure that the typewriter is kept in its current condition. For example, dirty type face could be identified with a questioned text typed on that typewriter. However, when maintenance and cleaning of the type has been conducted on that typewriter, the absence of the dirt particles on the type would change the appearance of the typewriting.

Typewriter Ribbons and Inks

Many typewriter ribbons, such as cloth, cardboard, wax base ink, polyurethene and solvent coated, are commercially available. When both the questioned document and the typewriter ribbon are submitted, it is possible to determine whether the questioned typewritten text was prepared by the ribbon submitted or by another ribbon of the same general style.

The FBI Laboratory does examine ribbons from suspected typewriting. Before submitting the ribbon for determining the text appearing on a particular typewriter, the investigating officer should determine whether the text is readable, since not all ribbons removed from typewriters can be read.

It is hoped that this article will better prepare the investigating officer to conduct a preliminary field examination of the evidence and better understand the opinions of the document examiner. The Document Section of the FBI Laboratory is always available to answer any questions regarding questioned documents.

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